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Calm after the storm? The role of social and environmental practices on small and medium enterprises resilience throughout COVID-19 crisis

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Abstract

This study aims to analyze whether resilient SMEs have been able to overcome the bump of the COVID-19 crisis in terms of profitability. When facing such unforeseen crises, SMEs require resilience, and one of the factors that positively affect resilience generation is the adoption of social and environmental practices (SEPs). Using survey data on the managerial perceptions of 259 SMEs, this study reveals the positive association between resilience and improvements in business performance, and how the adoption of SEPs is an essential prerequisite for developing a higher level of resilience. We corroborate these associations for SMEs at two moments of the pandemic: November 2020 and October 2021. Our findings show that more resilient SMEs exhibit better results in terms of business performance, and the prior adoption of SEPs is positively associated with the development of resilience in the crisis context of COVID-19.

KEYWORDS
COVID-19, CSR, Heckman model, organizational resilience, pandemic, SMEs, social and environmental practices

1 | INTRODUCTION

The global health crisis provoked by the COVID-19 pandemic has had devastating economic and social consequences. Globally, there has been a breakdown in the sustaining pillars of the world economy, such as the fall in the prices of raw materials, interruption of global supply chains, collapse in demand for tourist services, paralysis of airspace for commercial and tourist traffic, fear of investors, and devaluation of the currencies of the affected countries (Altig et al., 2020; Jain et al., 2020). One of the major challenges for businesses in overcoming this dire economic situation was to build resilience. Organizational resilience is a management perspective that analyzes why some firms have very low rates of failure during crises and disasters (Sullivan-Taylor & Branicki, 2011). In the context

of COVID-19, being a resilient firm means adapting to the circumstances by maintaining employment where possible and retaining a minimum level of profitability to bounce back and recover (Carmeli & Markman, 2011). In this regard, several scholars have argued that resilience can be built in organizations through the adoption of SEPs (e.g., DesJardine et al., 2019; Ortiz-de-Mandojana & Bansal, 2016). SEPs are understood as management practices that are related to ensuring improvements in the environmental and social performance of a firm (Ferrón-Vílchez et al., 2017; Ortiz-de-Mandojana & Bansal, 2016). Adopting SEPs entails moving beyond the focus on profit maximization to more sustainable goals. While adopting SEPs may not yield any immediate advantage for the company, it does help in the development of capacities for building resilience in the long run (Ortiz-de-Mandojana & Bansal, 2016), thus helping

the firm overcome unexpected events like crises. However, in the academic field there are limited works that relate SEPs to organizational resilience (DesJardine et al., 2019), except for the works of Ortiz-de-Mandojana and Bansal (2016) and DesJardine et al. (2019) both based on large corporations. In fact, when it comes to analyzing resilience in the context of SMEs, prior research is even scarcer, as SMEs "receive less public attention about their SEPs than their larger counterparts" (Crossley et al., 2021, p. 3741).

Similar to how a limited number of studies has analyzed the effect of SEPs on resilience in the context of SMEs, the effects of COVID-19 on businesses have been studied sparingly through the lens of smaller-sized companies (Crossley et al., 2021). Our study attempts to bridge this gap. Although COVID-19 has affected both large firms and SMEs, the former have more resources that can be used as safety nets for eventual losses,[1] whereas the latter may be more severely affected. SMEs represent about 90% of all businesses and employ more than 50% of the workforce worldwide (United Nations [UN], 2022; World Bank, 2015). Yet, they are considered to be more vulnerable to certain unpredictable events (Pal et al., 2014; Smallbone et al., 2012) because they lack financial, technological, and human resources compared to large companies (Aragón-Correa et al., 2008; Bhamra & Dani, 2011). However, despite these drawbacks, some SMEs have shown resilience in the face of major and unexpected shocks (Gunasekaran et al., 2011). For instance, in the context of the 2008–2009 economic crisis, Smallbone et al. (2012) found that although many SMEs could weaken due to changes in uncontrollable circumstances, they braved the crisis through their underlying resilience and greater flexibility and adaptability. Our study seeks to understand *how* some SMEs have been able to cope with the COVID-19 crisis by analyzing the role of SEPs in building resilience, allowing them to maintain (or even improve) business performance during this period. We posit that resilience during this crisis positively influenced firm performance. The rationale is that resilient companies tend to have—to a greater extent than the less resilient ones—the resources and skills that enable them to withstand crises and maintain (or even improve) their level of profitability. Drawing upon the context of a crisis (i.e., the COVID-19 pandemic), we aimed to empirically show that resilience in SMEs is positively related to profitability. Therefore, our study attempts to shed some light on the relationship between SEPs, resilience, and profitability. More particularly, we investigated how SMEs that adopt SEPs can generate resilience and how this resilience can be translated into profitability, all within the context of the COVID-19 crisis.

To achieve these objectives, our research uses a sample of 259 SMEs in the initial stage of the pandemic (i.e., moment 1) and a subsequent subsample of 114 from these initial SMEs in the advanced-pandemic stage (i.e., moment 2). Managers were asked about their perceptions of organizational resilience, changes in business performance, and the adoption of SEPs during the pandemic. We ran Heckman selection models to analyze the proposed relationships to account for selection bias and the causality between the adoption of SEPs and the resilience and performance of firms.

2 | BACKGROUND: THE COVID-19 CRISIS AND SMEs

Crises are far from new. Scholars have studied them for decades to be better prepared for future crises. For instance, the 1929 crash that led to the Great Depression highlighted the need for a significant government intervention when the private sector is at stake (Desmedt et al., 2010). The East Asian economic crisis of 1997–1998 showed that an overestimation of the attractiveness of these emerging economies, coupled with a poorly developed financial system (International Monetary Fund [IMF], 1998), could lead to a collapse that might affect entire countries (and their international investors) for years. The 2000–2002 burst of the dot-com bubble showed how excessive expectation of future gains could overrate companies with no future prospects. Finally, the 2008 financial crisis highlighted how low-interest rates and a relaxation of the criteria for obtaining mortgages resulted in a disproportionate increase in the housing prices, leading to massive nonpayment (Battisti et al., 2019). Every crisis that represents an unexpected event (Bansal et al., 2018) may help with future ones. For example, the 2000–2002 dot-com crisis bears important similarities to the current situation of cryptocurrency, which has suffered about $2 trillion loss in value in 2022. Consequently, despite the initial resistance of investors to a stronger regulation, they are now pledging for it (Congloff, 2022). However, COVID-19 represents a completely unforeseen event, as previous crises had an economic origin, not a sanitary one. Perhaps, the closest parallel of the pandemic could be the 9/11 terrorist attacks in 2001, which completely changed the U.S. foreign policy to the point that the "policy toward the Arab and Muslim world became based on the principle of guilty until proven innocent" (Washington Post, 2021). Given its major consequences, COVID-19 may be considered to have a greater reach because it had an almost immediate global impact. Never before has the highly globalized and interconnected world faced a pandemic of this magnitude. The National Bureau of Economic Research (NBER) classified the impact of COVID-19 across 17 countries in a recent analysis as "the largest collapse in demand for firms' output since the Great Depression" (Gourinchas et al., 2021, p. 2).

Thus, COVID-19 cannot be equated with any other previous crisis; it is "unique, unprecedented, or even uncategorizable" (Christianson et al., 2009, p. 846). The sudden appearance of the virus led to a dramatic increase in death rates in both developing and developed countries, forcing authorities to impose lockdowns and reduce business activities; this caused a shortage in supply systems, decline in production, and job losses, apart from other negative social and economic consequences (Altig et al., 2020; Jain et al., 2020). In most developed economies, such as the U.S. and European countries, the new policies allowed the functioning of the so-called *essential* activities (e.g., healthcare, energy, food, and agriculture) while banning the *non-essential* ones (e.g., tourism, restaurants, and retail stores) (Pedauga et al., 2022). As SMEs are more associated with these non-essential activities than large corporations, they experienced a greater impact of COVID-19 (Gourinchas et al., 2021). In other words, in addition to the fact that SMEs typically have fewer

resources than large companies to deal with an unexpected event (Blundel et al., 2013; Lepoutre & Heene, 2006), the business activity of many small businesses was disrupted overnight as part of a policy effort to halt the spread of the virus. While we do not question the need for strong policies that prioritize sanitary measures over economic consequences, the magnitude of the effect of COVID-19 on SMEs must be recognized. Finally, another unforeseen factor was the pandemic's unexpected duration and recovery period. For example, Foroni et al. (2020) in September 2020 forecasted that the "pre-COVID level of GDP will be achieved during 2021" (p. 12). Unfortunately, this prediction was proved incorrect.[2] All of these factors may lead us to believe that SMEs may have had no chance of surviving COVID-19. However, despite these setbacks, some SMEs did manage to overcome the crisis. This may be because some SMEs possess specific abilities that help them adapt to disruptive changes; in other words, they are resilient to crises.

3 | THEORETICAL REVIEW OF THE RESILIENCE OF SMEs

Resilience is an interdisciplinary concept that has been studied in a variety of disciplines, such as engineering (Holling, 1996; Pimm, 1991), psychology (Joyce et al., 2018), ecology (Holling, 1996), socioecology (Holling, 2001), and economics (Lazzaroni & van Bergeijk, 2014). The management field is not exempt from this trend, resulting in different conceptualizations of firm resilience (Conz & Magnani, 2020;

Fath et al., 2021) based on the interests or research objectives of the scholars. For instance, Melnyk et al. (2014) analyzed resilience in the context of supply chains and defined it as the ability to both minimize the negative consequences of the crisis (also called "resistance capacity") and return to pre-crisis levels ("recovery capacity"). With the core idea of absorbing and adapting to external shocks in mind, van der Vegt et al. (2015) took a risk management perspective to conceptualize resilience as the firms' capacity to "transform their structures and means of functioning" (p. 972). Ortiz-de-Mandojana and Bansal (2016) also held this idea of flexibility and combined it with a firm's ability to quickly process new information arising from an external crisis. Conz and Magnani (2020) performed a review of resilience definitions and highlighted the importance of constantly evolving and adapting to external shocks. Thus, in the academic arena, resilience is not a static term, but a dynamic one that involves continuous adaptation and change. Table 1 shows some of the seminal definitions of resilience that have emerged in the literature in recent years. As our analysis focused on the behavior of a specific size of companies—small and medium-sized—during the COVID-19 crisis, we opted for the definition by Ates and Bititci (2011), who analyzed resilience in SMEs and defined it as "the ability to anticipate key opportunities and events from emerging trends, constantly adapting and changing, rapidly bouncing back from disaster and remaining stable in a turbulent environment" (p. 5644). This definition incorporates the main ideas associated with resilience in the management context (i.e., adaptation, change, and recovery), and the concept of *adapting* fits perfectly in the COVID-19 crisis context,

TABLE 1 Definitions of resilience in management literature.

Authors	Definition
Acquaah et al. (2011)	Firm's ability to persist substantial changes in the business and economic environment and/or the ability to withstand disruptions and catastrophic events.
Ambulkar et al. (2015)	Firm's capability to be alert to, adapt to, and quickly respond to changes brought by a supply chain disruption.
Ates and Bititci (2011, p. 5644)	The ability to anticipate key opportunities and events from emerging trends, constantly adapting and changing, rapidly bouncing back from disaster and remaining stable in a turbulent environment.
DesJardine et al. (2019, p. 1455)	Organization's ability to persist despite disruptions (i.e., stability) and to regenerate (i.e., flexibility).
Gunderson and Pritchard (2002, p. 6)	Both the ability of a system to persist despite disruptions and the ability to regenerate and maintain existing organization.
Iftikhar et al. (2021, p. 412)	Supply chain resilience enables firms to integrate and transform internal and external resources, respond to changes brought by various disruptions, and thereby achieve a higher operational performance.
Ortiz-de-Mandojana and Bansal (2016, p. 1615)	The ability of organizations to anticipate, avoid, and adjust to shocks in their environment.
McPhee (2014)	Capacity to survive disruptions.
Pal et al. (2014)	Capability to be ready in time of crisis and to sustain superior organizational performance.
van derVegt et al. (2015, p. 973)	System's ability to be flexible, withstand stress, and recover from a disruption.

which has been central in previous studies on unprecedented crises, such as the work of Gittell et al. (2006) on the 9/11 terrorist attacks of 2001.

Furthermore, various classifications of the concept of resilience exist in the literature. According to Conz and Magnani (2020), there are different types of firm resilience based on the period of time in which resilience appears: proactive, absorptive, adaptive, reactive, and dynamic. *Adaptive resilience* is derived from the ecological sciences (Walker et al., 2004) and stays away from the idea of returning to the pre-crisis situation (as it could be conceptualized under other sciences, such as engineering). Instead, adaptive resilience considers the existence of multiple successful outcomes that are possible because of the firm's flexibility—a fundamental advantage of SMEs due to their small size (e.g., Ates & Bititci, 2011; Gray & Jones, 2016). Compared to large corporations, SMEs possess a horizontal structure that allows them to speed up the decision-making process, so that they can quickly adapt to changes instead of waiting for a long, hierarchized decision-making process. Additionally, SMEs tend to be closer to their providers, customers, and other stakeholders (Eggers et al., 2012), thereby further speeding their adaptation. Bourletidis and Triantafyllopoulos's (2014) work on SMEs during the 2008 financial crisis found that these companies were able to develop alternative and innovative tactics to survive. Finally, one of the biggest drawbacks of SMEs—their lower access to resources and funding—can be turned into an advantage, as they do not have a *margin of maneuver* and quickly adapting to changes often becomes a question of survival (Conz & Magnani, 2020; Gray & Jones, 2016). In this regard, Leyva-de la Hiz et al. (2019) showed that an excess of firms' slack resources leads to the selection of less profitable projects, as managers receive less scrutiny during times of financial prosperity. Therefore, the financial constraints of SMEs help optimize the effectiveness of their decision-making, turning one of their disadvantages into a strength.

In sum, this study attempted to analyze how SMEs generated resilience (and, consequently, improvements in profitability) that helped them cope with the COVID-19 crisis through the (previous) adoption of SEPs.

4 | EMPIRICAL REVIEW AND HYPOTHESES DEVELOPMENT

4.1 | Relationship between SEPs and the level of resilience of SMEs during COVID-19

SEPs are defined as the "organizational practices that have a positive effect on society by improving the firm's impact on the social and natural environments" (Ortiz-de-Mandojana & Bansal, 2016, p. 1616). Previous works have shown that SEPs may yield higher financial performance, improve company image and the relationships with stakeholders, and even generate some first-mover advantages (Ferrón-Vílchez et al., 2017; Godfrey et al., 2009; Grolleau

et al., 2013; Hart & Ahuja, 1996; Wang et al., 2008). Ahmed et al. (2019) analyzed UK firms, revealing that those committing to SEPs obtained higher valuations and lower risks. More particularly, these firms benefited from a lower cost of equity capital (i.e., better financing conditions) compared with those that did not pursue sustainable practices—an advantage that may be crucial in times of crises such as COVID-19. Similarly, Ferrón-Vílchez and Darnall (2016) found that firms with certified management systems were associated with a greater positive business performance than non-certified firms or those that did not adopt a management system. In the context of SMEs, Crossley et al. (2021) recently performed a qualitative analysis to show that SMEs that adopt SEPs benefit from higher reputation and image, social engagement, and higher legitimacy to carry out their operations. In this regard, while SEPs have been proven to exert a positive impact on the firm, the link between SEPs and a firm's resilience remains largely unexplored, with few but notable exceptions (e.g., DesJardine et al., 2019; Gray & Jones, 2016; Ortiz-de-Mandojana & Bansal, 2016). For instance, Ortiz-de-Mandojana and Bansal (2016), in their analysis of large corporations, found that companies developing SEPs were able to generate resilient outcomes, such as low financial volatility, higher growth, and higher survival rates. As prior works on the relationship between the adoption of SEPs' and the generation of organizational resilience (e.g., DesJardine et al., 2019; Ortiz-de-Mandojana & Bansal, 2016) are not empirically based on SMEs like ours, some major differences remain. Nevertheless, several of these insights could be applied to our rationale for this study. For instance, SMEs are characterized as having high financial volatility (Bhamra & Dani, 2011)—a situation that worsens in times of crises; hence, adopting SEPs can be critical for generating resilience in SMEs. The same reasoning can be applied to the survival rate, which tends to be significantly lower in SMEs than in large companies. In addition, several scholars have stated that SMEs have a natural tendency to be "overloaded with short-termism" (Pal et al., 2014, p. 411), which may hinder their resilience. In this regard, the long-term oriented and sustainable focus needed to develop SEPs may overturn this tendency and help SMEs acquire the long-run perspective needed to develop resilience. This is because many of the advantages of pursuing a sustainable strategy are not immediate (Ortiz-de-Mandojana & Bansal, 2016). Thus, combining the long-term vision of SEPs with the SMEs' natural tendency toward flexibility (Gray & Jones, 2016) may generate the resources and capabilities needed to adapt to external shocks. Thus, SMEs can develop dynamic sustainable capabilities (Forcadell & Aracil, 2021) that allow them to cope with crises of great magnitude such as the COVID-19 pandemic. Based on this reasoning, we consider that firms that adopted SEPs (before the crisis) were better able to generate resilience. Therefore, we propose the following hypothesis:

> **Hypothesis 1.** Adopting SEPs contributed positively to the development of organizational resilience in SMEs during the COVID-19 crisis.

4.2 | Relationship between business performance and the level of resilience of SMEs during COVID-19

Prior literature on management has indicated that the level of resilience generally influences firm performance (Iftikhar et al., 2021). Notably, in recent years, several studies (in the supply chain management literature) have empirically analyzed this relationship (e.g., Akgün & Keskin, 2014; Iftikhar et al., 2021; Li et al., 2017; Ruiz-Benítez et al., 2018; Yu et al., 2019). Based on a sample of 77 firms located in a large Midwestern city in the U.S., Li et al. (2017) found that preparedness, alertness, and agility (the three dimensions of supply chain resilience) were positively related to better financial performance. Other studies have not analyzed the direct (positive) effect of resilience on business performance, but have studied the mediating effect of resilience on the relationship between other variables and profitability. Based on a sample of 241 Chinese firms, Yu et al. (2019) corroborated the mediating effect of resilience on the relationship between the disruption orientation of the supply chain and financial performance. Some studies have argued that the relationship between resilience and firm performance could emerge through a third mediator variable, such as product innovativeness (Akgün & Keskin, 2014) and lean supply chain practices (Ruiz-Benítez et al., 2018).

However, most studies empirically corroborated these associations without making a distinction concerning the size of the companies in the sample, that is, without paying attention to the differences between large companies and SMEs in the resilience–performance binomial. Traditionally, based on the resource-based view (Barney, 1991), some scholars have enumerated several peculiarities of SMEs that, a priori, could deteriorate the positive relationship between resilience and business performance, such as resource scarcity, excessive focus on short-term cash, lack of access to the best conditions for financing, and constraints pertaining to technological and human resources (Ates & Bititci, 2011; Ismail et al., 2011; Pal et al., 2014; Sullivan-Taylor & Branicki, 2011).

Nevertheless, recent literature on resilience contends that adaptive capability, flexibility, and agility are well-established characteristics of SMEs that are similar to the notion of resilience (Akgün & Keskin, 2014; Gunasekaran et al., 2011; Ismail et al., 2011; Smallbone et al., 2012). SMEs could be more flexible in responding to changing and turbulent contexts (Branicki et al., 2018). The "survival instincts" and the "firefighting management style" that are usually predominant in SMEs may lead to a higher tolerance for changes (Ates & Bititci, 2011; Sullivan-Taylor & Branicki, 2011) and, thus, to higher levels of resilience. It is also essential to highlight that most of the studies that positively link (directly or indirectly) resilience with firm performance consider that this linkage emerges especially in situations of organizational change or disruption (e.g., Yu et al., 2019), extreme events (e.g., Sullivan-Taylor & Branicki, 2011), or turbulent environments (e.g., Burnard & Bhamra, 2011; Li et al., 2017). This circumstance, added to the aforementioned characteristics of resilient SMEs, leads to the hypothesis that the most resilient companies during the COVID-19 crisis have been those better able to overcome the onslaught of the pandemic (Fath et al., 2021) by maintaining and even increasing their profits. Similarly, Smallbone et al. (2012) found that resilient SMEs in New Zealand were far less affected by the (negative) financial impacts of the 2009 economic recession.

Based on these arguments, in the context of SMEs during the COVID-19 crisis, we consider that the most resilient SMEs were more likely to maintain and even improve their profitability rates. Thus, we hypothesize the following:

> **Hypothesis 2.** During the COVID-19 crisis, the most resilient SMEs were more likely to be associated with improvements in business performance.

5 | RESEARCH DESIGN AND METHODOLOGY

5.1 | Sample and data

Data on SMEs' organizational characteristics such as environmental management practices or the level of resilience are not usually available from secondary sources. For this reason, we developed a questionnaire to measure our variables of interest drawing on extant literature (Johnstone et al., 2007). We used data from this survey that examined SMEs from different industries in Andalusia, a region in southern Spain. According to the National Institute of Statistics of Spain, Andalusian companies constituted 15.6% (531,045 companies) of the total number of companies in Spain in 2020, of which 99.91% are SMEs (DIRCE, 2021). These data highlight the weight of SMEs in the Spanish and Andalusian business contexts and reinforce the need to call for academic research to shed light on how SMEs faced the challenge posed by COVID-19 (Crossley et al., 2021).

The inclusion criteria in the sample were SMEs with 10–250 employees, located in Andalusia ($N > 21,000$ firms). Firms were designated as SMEs according to the official standards of the European Commission (2003).[3] To contact individuals responsible for the SMEs, we obtained information from the SABI database, which offers economic and financial information about over 940,000 Spanish companies and 100,000 Portuguese companies. The objective of using the SABI database was to triangulate secondary (official) data with self-reported subjective measures gathered through the questionnaire. To empirically examine our research hypotheses, we triangulated managers' perceptions using objective secondary data. We matched self-reported variables from the questionnaire with financial and economic variables from the existing database. Merging both secondary and self-reported (quantitative) data offers some advantages, such as providing a more complete picture of the phenomenon and ensuring robust evidence by allowing triangulation and corroboration (Oppermann, 2000).

In the SABI search parameters, we considered Andalusian SMEs for which contact information (i.e., marketable telephone number) and some essential economic data (e.g., number of employees,

return on assets [ROA], total assets, and other financial variables) were available for the last two fiscal years (2018 and 2019). The initial target population consisted of 15,862 Andalusian SMEs, the total number of SMEs with contact information in the SABI database. Based on this figure, we calculated the sample size necessary to obtain generalizable empirical results. Considering an error of 5%, a confidence level of 95%, and a population of 15,862 SMEs, the initial sample size was 376 companies. We contacted (and interviewed using computer-assisted interviewing technology) managers of 259 of these 376 SMEs in the first stage, leaving a final sample representing 68.88% of the contacted population.

The questionnaires were answered by individuals responsible for SME management activities—general managers—because such individuals are typically the most knowledgeable and experienced regarding the SMEs' operations and the associated regulations (Aragón-Correa et al., 2008). The questionnaire was launched at two different time-points during the COVID-19 crisis: moment 1, an initial launch of the questionnaire, in November 2020, with 113 items on the measures that were being adopted by the SMEs in the sample; and moment 2, a final launch of the survey with 79 items, in October 2021, which asked managers of the same companies as in moment 1 about the measures that were adopted during the COVID-19 crisis. The purpose of this dual launch at two different moments with a 11-month interval was to record the differences in the perceptions of managers about the management practices that were adopted (1)

while the COVID-19 crisis was ongoing and (2) at the very least, a stage considered to be near the end of the crisis. At moment 2, we contacted 114 managers of the initial launch ($n = 259$), leaving a final sample representing 30.32% of the contacted population. Table 2 lists the technical file of the study. The sampled SMEs had an average size of 53 and 57 employees for the initial and final launch, respectively.

To demonstrate the comparability of both samples, we ran the McNemar's test (1947) for paired nominal data. This test is applied using 2×2 contingency tables with matched pairs of subjects and serves to determine whether "marginal homogeneity"[4] exists, that is, whether the two marginal probabilities for each outcome are equal. In our case, we opted to subject the dichotomous variable "resilience" to the McNemar's test. The variable "resilience" was measured at two points in time (November 2020 and October 2021) using the same scale and items. Thus, we included the same subject (i.e., an SME) in two samples that were paired at two moments of time: treatment #1 was the moment "November 2020," in the middle of the COVID-19 crisis, and treatment #2 was the moment "October 2021," 11 months later, when the COVID-19 crisis had already lasted for more than a year and a half. With this comparison of paired samples, using the variable "resilience," we attempted to determine whether these matched pairs of subjects' responses were statistically comparable. In the case of the dichotomous variable "resilience," the McNemar's test showed a χ^2 of .327 ($p = .568$).

TABLE 2 Technical file of the study.

Population	Andalusian SMEs (irrespective of sector)
Sampling frame	SABI database
Sample size	• Moment 1 (initial launch): 259 SMEs • Moment 2 (final launch): 114 SMEs (from the initial sample)
Geographical scope	Andalusia (southern Spain)
Survey type	By phone (computer-assisted interviewing)
Date of field work	• Moment 1 (initial launch): November 2020 • Moment 2 (final launch): October 2021
Steps in the survey design and data collection	**STEP 1.** Perform a questionnaire survey with constructs and items focused on SMEs' organizational characteristics. **STEP 2A.** Determine the inclusion criteria for belonging to the sample: SMEs with 10–250 employees located in Andalusia ($N > 21,000$ SMEs) **STEP 2B.** Determine the SABI database search parameters— contact information available (i.e., marketable phone number) among other available financial information for 2018 and 2019. Combining these steps, the initial target population was 15.862 Andalusian SMEs. **STEP 3A.** Calculate the sample size necessary for generalizability: 376 SMEs. **STEP 3B.** Contact SMEs by phone (computer-assisted interviewing). **STEP 4 (moment 1).** The sample size was 259 SMEs (i.e., 68.88% of contacted population) **STEP 5 (moment 2).** The sample size was 114 SMEs (i.e., 30.32% of contacted population)

This result indicated that the null hypothesis must be accepted and marginal homogeneity between both the samples existed, providing evidence for a statistically non-significant effect in the second sample. Consequently, both samples were considered comparable. Nevertheless, we also ran a similar test in the case of continuous variables—the Wilcoxon signed-rank test, a non-parametric test that can be applied when normality assumption does not exist. In our case, we subjected the continuous version of the variable "resilience" to the Wilcoxon signed-rank test (Siegel, 1956), which showed a standardized statistic of .771 ($p = .441$). This offered identical results as the McNemar's test, confirming the suitability for comparing both the matched samples.

When using survey techniques, several biases may arise, such as common method variance (CMV) or social desirability. CMV refers to the amount of spurious covariance shared among variables and is evaluated by relying on Harman's single factor test, which consists of factors analyzing all indicators used in the study (Podsakoff & Organ, 1986). When a single common factor emerges, CMV exists. We performed this test and our results revealed that no single factor accounted for reducing concern about CMV. The same process was repeated for the final launch of the questionnaire (i.e., moment 2) and no single common factor emerged.

We addressed social desirability bias by ensuring respondent anonymity. Additionally, in the initial launch of the questionnaire, the seven-section survey (containing 113 items) asked a wide range of questions concerning the managerial perceptions of resilience, corporate social responsibility (CSR) initiatives, influence of stakeholders, and perceptions about management practices and performance during the COVID-19 period in SMEs. Survey items related to SEPs (Section 5) were separated from questions related to resilience (Section 3) and business performance (Section 1). Further, each section of the questionnaire had a header informing the respondent that a new section on a specific concept was about to begin (e.g., resilience, adoption of SEPs, innovation, etc.) and the definition of that concept was presented to improve clarity and avoid confusion. By asking questions on diverse topics and separating questions of interest, it was possible to minimize social desirability bias.

5.2 | Variables

5.2.1 | Changes in business performance during COVID-19

Prior literature has analyzed business performance using self-reported subjective and objective measures (Franco-Santos et al., 2007). Self-reported subjective measures are of two main types: (1) those referring to managers' perceptions related to the organization's relative position in comparison with its competitors (e.g., González-Benito & González-Benito, 2005; Martínez-Costa & Martínez-Lorente, 2008); and (2) those referring to managerial perceptions of their companies' overall business performance (Darnall, 2009; Darnall et al., 2008). The objective measures

refer to variables gathered from financial statements; these include ROA, return on investment (ROI), return on equity (ROE), sales, and earnings before interest (e.g., Grolleau et al., 2013; Hart & Ahuja, 1996; Hendricks & Singhal, 2001; Martínez-Costa & Martínez-Lorente, 2008). Similar to Darnall et al. (2008) and Darnall (2009), we assessed business performance through an adaptation of self-reported subjective measures, specifically managerial perceptions about changes in overall business performance of SMEs due to the COVID-19 crisis. We relied on a survey question to the managers: "Compared to the fiscal year before the pandemic, has your organization's business performance (1) worsened, (2) stayed the same, or (3) increased?" The mean of this item was 1.84/3 and 2.07/3 at moment 1 ($n = 259$; November 2020) and moment 2 ($n = 114$; October 2021), respectively, with a median of 2.00/3 in both cases. The average difference of this item between both moments of time was 0.228 (median = 0), indicating that although there was no significant difference between the answers offered at moment 2 and those given in moment 1, the answers at moment 2 were slightly more optimistic (i.e., more positive) than those offered at moment 1, a period when COVID-19 had the most damaging effects on businesses.

5.2.2 | The level of resilience during COVID-19

A debate exists in the academic literature on how to measure resilience. For instance, some studies that rely on secondary data consider that resilience cannot be measured directly (e.g., DesJardine et al., 2019; Ortiz-de-Mandojana & Bansal, 2016; Wenzel et al., 2020); therefore, they analyze its expected outcomes. Given this lack of consensus regarding the variables to employ, researchers have relied on a wide variety of variables, such as retrenchment (i.e., focusing on core businesses and reducing operation costs), survival rate, levels of financial volatility, and time to recover ("bounce back") from a crisis. As we relied on primary data, similar to prior studies (e.g., Campbell-Sills & Stein, 2007; Notario-Pacheco et al., 2011; Soler Sánchez et al., 2016), we developed our resilience variable by relying on 12 survey items, which are shown in Table 3. Responses were measured on a seven-point Likert scale, with options ranging from "Completely disagree" (=1) to "Completely agree" (=7). We coded these items by aggregating the responses through the mean, obtaining a continuous (i.e., metric) variable called "average resilience during COVID-19." This average resilience was "the mean of the means" of the 12 resilience items. Thus, the maximum value of this variable, 7, indicated that the respondent answered "completely agree" in all 12 items, while the minimum value, 1, indicated that the respondent answered "completely disagree" in all 12 items presented in Table 3. We calculated the mean (5.97/7 and 5.99/7 at moments 1 and 2, respectively) and median (6.13/7 and 6.00/7 at moments 1 and 2, respectively) of this average resilience. The average difference of this item comparing both moments of time was 0.02 (median = 0), indicating that there was no significant difference in the answers provided at moment 2 compared with

TABLE 3 Items and descriptive statistics of the level of resilience during COVID-19.

Variable/Item	Mean Moment 1	Mean Moment 2	Difference in mean
1. My organization is able to adapt to changes due to COVID-19.	6.07	6.20	0.13
2. My organization is able to cope with unfavorable situations due to COVID-19.	6.03	6.22	0.19
3. My organization tries to take the problems related to COVID-19 with a good disposition and see its positive side.	5.83	5.73	−0.10
4. Dealing with the stress generated by COVID-19 is making my organization stronger.	5.71	6.40	0.69
5. After a serious difficulty or setback, such as the current global pandemic situation, my organization is able to recover.	6.00	6.92	0.92
6. The organization has the capacity to achieve its objectives despite the current obstacles.	6.24	6.05	−0.18
7. My organization is able to function despite pressure due to COVID-19.	6.12	6.23	0.11
8. My organization does not easily succumb to problems or failures.	6.00	6.81	0.81
9. My organization is strong in the face of difficulties related to COVID-19.	6.12	6.33	0.21
10. My organization may face setbacks and unstable or unpleasant situations, such as the current global pandemic.	6.00	6.52	0.52
11. My organization is able to recover from significant damage, such as that caused by the current global pandemic, and be successful.	5.97	9.09	3.12
12. My organization is capable of being successful against all odds, as is the case during the current global pandemic.	5.91	6.72	0.81
Average resilience during COVID-19	5.97	5.99	0.02
High resilience: Yes/No	0.59	0.61	0.02

Source: Adapted from Campbell-Sills and Stein (2007), Notario-Pacheco et al. (2011), and Soler Sánchez et al. (2016).

moment 1. Regarding the SMEs' resilience, the data obtained in moment 2 were gathered when the worst situation and effects of the COVID-19 crisis had passed for most companies. Additionally, by calculating these means and medians, we could create a dichotomous variable: companies with an average resilience equal to or greater than 6 were coded "1," else "0."[5] Thus, "1" refers to companies with high level of resilience during the COVID-19 crisis and "0" to SMEs with none or a low level of resilience. Descriptive statistics of these two aggregated variables (i.e., continuous and dichotomous) and the 12 items are shown in Table 3.

5.2.3 | The record of temporary employment regulation

To address issues related to company heterogeneity, we controlled for differences in the level of "record of temporary employment regulation" (RTET). RTET has been commonly used during the economic crisis caused by COVID-19, as it is a mechanism that allows companies to totally suspend or reduce their employment relationship with their employees for a certain period. The percentage of an SME's workforce in an RTET situation can affect the relationship between its level of resilience and change in profitability due to COVID-19. When RTET has a high number of employees, the level of resilience may be lower than in a situation where the entire workforce is fully staffed. In turn, this can significantly affect profitability. To account for this control variable, we relied on data derived from the following question:

"Has your organization adopted (or is it still adopting) an RTET as a consequence of the pandemic?" Respondents could answer "1 = No," "2 = Yes, the RTET has affected less than 50% of the workforce," or "3 = Yes, the RTET has affected more than 50% of the workforce." The sampled SMEs had an average RTET equal to 1.52 (only 16.22% of the sample chose option "3") and 1.47 (only 14.91% of the sample chose option "3") for moments 1 and 2, respectively.

5.3 | Predicting resilience during COVID-19: The selection bias of SEPs' adoption

Prior to estimating the relationship between managerial perceptions of resilience and changes in business performance during COVID-19, it is essential to consider whether SMEs were resilient because of observed or unobserved characteristics that could be related to changes in their business performance. The source of this concern, we assumed, was that managerial perceptions of the level of resilience due to COVID-19 were subject to selection bias. Selection bias refers to the possibility that statistical distortion occurs as a consequence of some individuals in the population being less likely to be included in the sample than others (Heckman, 1979); when this bias exists, it must be considered empirically (Heckman, 1979). For this purpose, we simultaneously accounted for some factors that could influence the level of resilience of SMEs during the COVID-19 crisis. Prior literature suggests that if companies adopt several environmental management practices

that are designed to encourage sustainable development within the organization, they are more likely to be resilient (e.g., Ortiz-de-Mandojana & Bansal, 2016). To account for this circumstance, based on prior literature that has empirically analyzed the adoption of SEPs in SMEs (Aragón-Correa et al., 2008; Conway, 2015; Crossley et al., 2021; Darnall et al., 2008; Johnson, 2015; Johnson & Schaltegger, 2016), we employed several survey items that asked SME managers to determine whether the adoption of environmental management practices, usually adopted by SMEs, have been modified during the COVID-19 crisis. Managers were asked about changes in the adoption of environmental management practices, such as the number of environmental audits, monitoring of environmental impacts, and the use of environmental certification, among others. Table 4 shows the specific items and the possible responses.

In addition to SEPs and related to SMEs' resilience, prior literature identifies other factors that could affect the level of resilience in the case of SMEs, specifically the company's level of indebtedness. Smallbone et al. (2012) measured the variable "experience of recession-related effects" by asking SME managers about the level of cash at the bank, credit periods, and availability of bank loans. Thus, we controlled for the SMEs' size (through the number of employees) and for two financial variables obtained from the SABI database: level of indebtedness and ROE (i.e., financial profitability) of the company; the three measures were incorporated into the model considering the last fiscal year available in the SABI database. The next section explains how the applied methodology accounts for selection bias.

5.4 | Empirics: The Heckman model

We assessed the relationship between managerial perceptions of the level of resilience and changes in business performance during the COVID-19 crisis using a technique to account for selection bias: Heckman estimation (with probit estimation in the selection stage). This technique, which belongs to the selection model class, is a two-stage least-squares estimation. The first stage of the Heckman model (i.e., the selection stage) estimates the probability of belonging to the sample and the second stage (i.e., the output stage) simultaneously analyzes the factors that affect business performance. Thus, while executing the Heckman model, in our case, we estimated two equations simultaneously: *Equation 1*—called the "selection stage" and connected with Hypothesis 1—examined the link between the adoption of SEPs during the COVID-19 crisis and resilience, while *Equation 2*—called the "output stage" and connected with Hypothesis 2—examined the association between managerial perceptions of resilience concerning the COVID-19 crisis and improvements in business performance during the COVID-19 pandemic as a dependent variable. In Equation 1, we also accounted for other control variables related to the managerial perception of resilience during the COVID-19 pandemic, such as size (number of employees), ROE, and the indebtedness ratio in the previous fiscal year.

Equation 1: SELECTION STAGE

(Dependent variable: *prob high resilience during COVID-19 = 1*) = f [*non-financial reports, environmental audits, use of ecological raw materials, monitor environmental impacts, environmental certification, ecolabels, life cycle analysis, ethic codes, control vars (size, ROE, indebtedness), ε_{i2}**].

Equation 2: OUTPUT STAGE

(Dependent variable: *changes in business performance*) = f (*Average resilience during COVID-19, RTET as control variable, ε_{i1}**)

*ε_{i1} and ε_{i2} are error terms.

This estimation assumed that changes in business performance due to the COVID-19 crisis and the variables that explain resilience are separate but interrelated through a correlated error structure (Greene, 2011). In the selection stage, the Heckman estimation treats the dependent variable (i.e., managerial perception of resilience during COVID-19) as a dichotomous measure (high level of resilience versus low or zero level of resilience) using probit estimation, while in the output stage, the explanatory variable of resilience and the dependent variable (i.e., improvements in business performance during the COVID-19 pandemic) are treated as continuous measures.

In estimating the interrelationship of the errors, the Heckman model produces a "Mills' lambda": if statistically different from zero ($\alpha = .05$), it indicates that the errors are correlated. A likelihood ratio test evaluating the null hypothesis—that the "Mills' lambda" is equal to zero—is used to offer support for whether a Heckman model is an appropriate technique for the data. A rejection of the null hypothesis provides evidence of selection bias among the explanatory variables and verifies the need for selection bias correction in the estimation approach.

6 | RESULTS

6.1 | The Heckman model's results

Table 5 presents the findings from the Heckman model. The Wald Chi-square statistic (11.87 and 12.89 for moments 1 and 2, respectively) were statistically significant ($p < .01$), indicating sufficient model fit. Further, the Mills' Lambda was statistically significant ($p < .10$), indicating the appropriateness of using the Heckman model and controlling for selection bias.

With regard to predicting resilience during the COVID-19 crisis, the Mills' Lambda test was statistically significant ($p < .10$) in both models (i.e., at both time points), indicating the necessity to control for the adoption of some environmental practices when analyzing resilience. The estimated coefficients of some environmental management practices, which were positive and statistically

TABLE 4 Items related to SEPs in SMEs.

Items	Possible responses	Dichotomous version[a]
During the pandemic, is your organization collecting information to produce **annual non-financial reports** (social, sustainability, CSR)?	1 = No 2 = Yes, sometimes 3 = Yes, always	0 = No 1 = Yes (sometimes, always)
Because of the pandemic, has your organization conducted a greater number of internal **environmental audits**?	1 = No, fewer environmental audits have been carried out 2 = The same number of environmental audits have been carried out 3 = Yes, more environmental audits have been carried out	0 = No, fewer (...) 1 = The same (...) + Yes, more (...)
During the pandemic, is your organization using **ecological raw materials** or auxiliary products with lower environmental impact?	1 = No, there is a lesser use of ecological raw materials 2 = The same use of ecological raw materials 3 = Yes, there is a higher use of ecological raw materials	0 = No, there is a lesser (...) 1 = The same (...) + Yes, there is a higher (...)
Has your organization evaluated its **environmental impacts** to a greater extent compared to how it was done before the pandemic?	1 = No, fewer environmental impacts have been evaluated 2 = The same number of environmental impacts have been evaluated 3 = Yes, more environmental impacts have been evaluated	0 = No, fewer (...) 1 = The same (...) + Yes, more (...)
Does your organization have **environmental product certifications** (ecolabel, environmental product declaration, etc.) during the pandemic?	0 = No 1 = Yes	0 = No 1 = Yes
Does your organization have **environmental certifications** during the pandemic?	1 = No 2 = Yes, ISO 14001 3 = Yes, EMAS 4 = Yes, others. Which ones?	0 = No 1 = Yes (ISO14001, EMAS, others)
Is your organization adopting **life cycle analysis** as a management tool during the pandemic?	1 = No, it is not typical of the sector 2 = No, although it is common in the sector 3 = Yes, sometimes 4 = Yes, always	0 = No 1 = Yes (sometimes, always)
In the last 3 years, has your organization drafted and/or adopted **codes of ethics** and/or codes of conduct?	1 = No 2 = Yes, sometimes 3 = Yes, always	0 = No 1 = Yes (sometimes, always)

[a]The dichotomous version of the responses was created for use in the moderation procedure.

Source: Adapted from Conway (2015), Crossley et al. (2021), Darnall et al. (2008), Johnson (2015), and Johnson and Schaltegger (2016).

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TABLE 5 Results of the Heckman estimation model.[a]

Dependent variable: Changes in business performance	Coefficients (moment 1)	Coefficients (moment 2)
Explanatory variables		
Average resilience during COVID-19	−.043	.341***
RTET	−.268***	−.130
Constant	2.317***	−.500
Predicting resilience during COVID-19		
Dependent variable: High resilience: Yes/No		
Non-financial reports	−.030	.253
Environmental audits	−.002	−.125
Ecological raw materials	.019	−.232
Monitoring environmental impacts	−.056	−.105
Environmental certification	.466**	−.280
Environmental product certification or ecolabel	−.507***	−.512*
Life cycle analysis	−.024	.102
Ethic codes	.239***	
Size (number of employees; previous fiscal year)	.003*	.001
ROE (previous fiscal year)	.006	.011**
Indebtedness (previous fiscal year)	−.009**	.000
Overall model statistics		
Lambda Mill	.416*	.699*
Wald test χ^2	11.7***	12.89***
n	259	114

Abbreviations: ROE, return on equity; RTET, record of temporary employment regulation.

[a]These models were assessed using Heckman regression with simultaneous estimation of the relationship between the managerial perception of the level of resilience and changes in business performance during the COVID-19 crisis.

* $p < .10$; ** $p < .05$; *** $p < .01$.

significant, such as environmental certification (.466; $p < .01$; model moment 1) or the development of ethical codes (.239; $p < .01$; model moment 1), indicated the necessity of considering the environmental management practices they adopt when measuring the level of resilience of a company. These results partially confirmed Hypothesis 1, which states that the level of resilience was previously related to the adoption of SEPs and, therefore, resilience is not an isolated phenomenon in a moment of time, but rather depends on the previous situation (i.e., resources and abilities) of the company. This result is in line with those of prior studies that empirically demonstrated the importance of SEPs' adoption in

creating organizational resilience (DesJardine et al., 2019; Ortiz-de-Mandojana & Bansal, 2016), although they employed the context of large companies. Our analysis revealed that the significance of SEPs extends beyond large companies, becoming a critical factor even in the case of smaller businesses that have been severely impacted by COVID-19 (Crossley et al., 2021).

Further, the Heckman model results indicated that the estimated coefficient of "average resilience during COVID-19" was positive and statistically significant (.341; $p < .01$) in the model that used the data gathered at moment 2 ($n = 114$), suggesting that the most resilient SMEs were more likely to have witnessed positive changes (i.e., improvements) in business performance during COVID-19. These findings offered some support for Hypothesis 2, which states that the most resilient SMEs were more likely to be associated with improvements in business performance during COVID-19. This result is in accordance with prior literature that argued the positive relationship between resilience and profitability (e.g., Akgün & Keskin, 2014; Ismail et al., 2011).

6.2 | Additional analysis: The mediation effect of resilience during COVID-19

We supplemented our empirical analysis using the Heckman model with additional analyses to empirically verify the existence of causality through selection bias. In other words, SMEs that adopted SEPs were positively related to the development of resilience during COVID-19; therefore, this resilience was positively related to improvements in business performance. These sequential associations were accommodated in a regression analysis with a mediating variable, in which the dependent variable was "change in business performance," the explanatory variable was "level of SEPs' adoption," and the moderating variable was "resilience" during COVID-19. Following this mediation scheme, we performed a mediating variable regression using the PROCESS macro[6] developed by Andrew F. Hayes. To create the variable "level of SEPs' adoption" in a dichotomous mode, we considered the sum of the eight SEPs shown in Table 4 (see "Dichotomous version" column). The maximum value, 8, indicates that the SME adopted eight SEPs before and during COVID-19 and the minimum value, 0, indicates that the SME did not adopt any SEP, neither before nor during COVID-19. The mean of this variable was 5.48 (*SD* = 1.9) and the median was 6. Figure 1 shows the results[7] of this analysis.

Our findings showed that neither the relationship between "level of SEPs' adoption" and "resilience" nor that between "resilience" and "changes in business performance" were statistically significant. The indirect effect of "level of SEPs' adoption" on "changes in business performance" through the resilience variable was not significant (LLCI = −.0456; ULCI = .0632). These results indicated no mediating effect between the adoption of SEPs and changes in profitability during COVID-19 through the levels of resilience developed during this period. However, the direct effect of "level of SEPs' adoption" on "changes in business performance" was positive and statistically significant. This result revealed a positive relationship between the adoption of SEPs and improvements in business
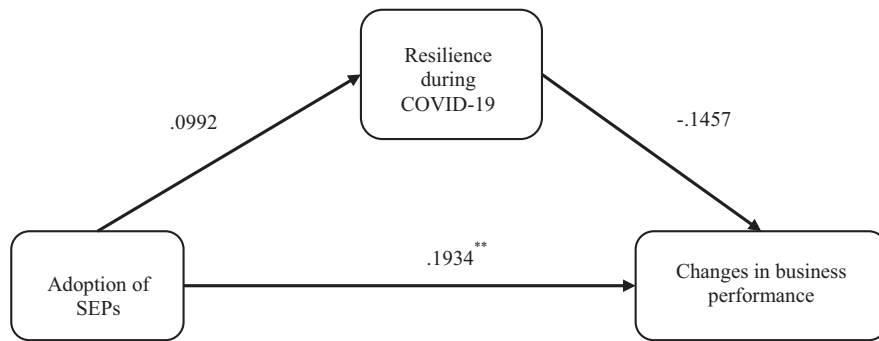
FIGURE 1 The mediation effect of resilience during COVID-19 on the relationship between SEPs' adoption and changes in business performance.

** p<.05

performance during COVID-19, which is consistent with recent literature on the positive relationship between SEPs' adoption and profitability (e.g., Ahmed et al., 2019; Ferrón-Vílchez & Darnall, 2016). This positive association is in line with the results of the Heckman model. However, it is important to clarify that both models do not empirically verify the same relationships from a conceptual point of view; therefore, differences exist between the regression analysis with a mediation effect and the Heckman model.

- According to Baron and Kenny (1986), "the mediator function of a third variable represents the generative mechanism through which the focal independent variable is able to influence the dependent variable of interest" (Baron & Kenny, 1986, p. 1173).
- The regression analysis using the Heckman model focuses on analyzing "the bias that results from using nonrandomly selected samples to estimate behavioral relationships as an ordinary specification bias that arises because of missing data problem" (Heckman, 1979, p. 153).

Thus, mediators explain how or why certain effects occur in a given relationship (Baron & Kenny, 1986), while the Heckman model focuses on controlling the selection bias of a sample (Heckman, 1979). These techniques are not exclusionary; they can offer complementary results, but are not configured to analyze the same effects from a theoretical perspective. In our case, the results of the Heckman model showed the suitability of considering the adoption of SEPs as a previous step to the generation of resilience during COVID-19, which explains the improvements in business performance during the crisis. However, the statistical non-significance of the coefficient of the mediating variable "resilience" indicates that there is not necessarily a sequential relationship in the trinomial "SEPs' adoption–resilience–performance," but that the relationship is causal, as the Heckman model results show.

7 | DISCUSSION AND CONCLUSIONS

7.1 | Summary and conclusions

Resilience has been one of the most necessary capacities to overcome the negative effects of the (economic) crisis of COVID-19 in the case of organizations in general and SMEs in particular (Crossley

et al., 2021; Fath et al., 2021; Iftikhar et al., 2021). The results of this study empirically demonstrate that (1) the adoption of SEPs has been the antecedent for this high level of resilience during the COVID-19 crisis and (2) the most resilient SMEs have been able to improve their business performance during the crisis.

Our contributions include the following. First, our findings show that organizations manifesting strong CSR before the crisis have been more resilient during the pandemic. Resilient SMEs (SEP adopters) have been able to improve their profitability during this pandemic. Second, our results offer an important lesson about the managerial response to the COVID-19 crisis: SMEs that are more oriented toward CSR practices are more resilient and, therefore, are better able to withstand negative economic situations such as the COVID-19 crisis. Finally, we empirically demonstrate that the SMEs in our sample developed solid crisis management capacities (i.e., resilience) through the (previous) adoption of SEPs. These SEPs represent dynamic sustainability capabilities (Forcadell & Aracil, 2021) that allowed the SMEs to continuously adapt to the changes propelled by the COVID-19 pandemic and maintain their business activities. Additionally, from an empirical perspective, we also demonstrate that a conceptual and methodological difference exists between causality models (e.g., Heckman model) and the statistical analysis of association between variables (e.g., mediated regression analysis).

7.2 | Theoretical implications

Our study has several significant theoretical contributions to the literature on resilience, SMEs, and CSR. First, related to SMEs' resilience capacity during crises, Smallbone et al. (2012) argued that "recessions generate contradictory tendencies, with some constraining business owners in achieving their objectives, while others are enabling" (p. 755). Following this line, the theoretical work of Burnard and Bhamra (2011) provides a means to classify key components of organizational resilience concerning organizational response attempting to answer, through a theoretical model, how firms overcome disasters and other disruptive events, and what enables successful firms to adapt and transcend these events. Our results contribute empirically to this theoretical framework by adding to the evidence concerning a disruptive and

unforeseen event—the COVID-19 crisis. We have found that resilient SMEs have been able to not only *bounce back* from this crisis but also improve their business performance during the pandemic. Moreover, Ortiz-de-Mandojana and Bansal (2016) stated that resilience is a latent capability whose "benefits take a long time to manifest." They are "difficult to detect in the short term, but resilience-related benefits are possible to detect in the long term" (Ortiz-de-Mandojana & Bansal, 2016, pp. 1615–1616). While Ortiz-de-Mandojana and Bansal (2016) showed that resilient firms might obtain positive long-run results at the cost of short-run losses, we show that when companies face a crisis, the benefits of being a resilient SME can also manifest in the short term. This may be because SMEs have to pay close attention to both short-term and long-term performance, as their "liability of smallness" (Freeman et al., 1983) makes it difficult for them to sacrifice some short-term gains, as they risk bankruptcy, which is less likely in large corporations. Thus, while the capacity to be resilient has to be developed gradually over time (for instance, through the accumulation of adopted SEPs), the specific nature of SMEs may cause the positive effect of resilience to emerge both in the short and long term when extreme events occur (Sullivan-Taylor & Branicki, 2011).

Second, concerning the relationship between resilience and business performance, previous studies have argued that higher levels of resilience are associated with better firm performance (e.g., Yu et al., 2019). While this relationship has already been analyzed in the context of large corporations, our results show that they also apply to SMEs. In this regard, we consider that SEPs may have played a key role in creating sustainable dynamic capabilities (Eisenhardt & Martin, 2000; Winter, 2003; Zollo & Winter, 2002). While previous literature has shown the advantages of developing *general* dynamic capabilities (e.g., Teece et al., 1997), our results show that these benefits can be extended when the firm develops *sustainable* dynamic capabilities. This approach is related to the ethical perspective of the firm because committing to sustainability necessarily involves positive externalities (Hart & Ahuja, 1996), that is, losing the appropriability of own activities for the benefit of the society. In other words, we do not theorize (or measure) the direct relationship between SEPs and business performance, which may undermine the ethical purpose of sustainability, but analyze how SEPs may help build firm resilience.

Finally, related to the predecessor resources that explain the development of resilience capacity, Pal et al. (2014) argued that resilience could be "favored or inhibited by the significance or lack of antecedents, respectively" (p. 421). Further, the meta-analysis by Iftikhar et al. (2021) revealed a few antecedents of firm resilience in supply chain management. In line with these studies, our findings contribute to the adoption of SEPs as one of the main prerequisites of resilience in the case of SMEs during the COVID-19 crisis. In prior management literature, there are calls for more nuanced (and empirical) research on "greening and sustainability issues" concerning the SMEs' resilience that require further research (Gunasekaran et al., 2011). Our results contribute by showing that it is essential to empirically control for the antecedents of resilience, especially when the level of resilience is related to an outcome variable, such as firm performance.

7.3 | Implications for managers and regulators

Our results have significant implications for practitioners and regulators that may help firms in general and SMEs in particular during crises. This study contributes to the knowledge of how firms could face extreme events, external shocks, or turbulent environments because our results show that the more resilient the SME, the better it can survive (in terms of profitability) during crises, and the adoption of SEPs contributes positively to this relationship. According to the European Commission (2022), "(…) SMEs are the backbone of Europe's economy. They represent 99% of all businesses in the EU […] and play a key role in adding value in every sector of the economy". Due to the strategic and long-term oriented nature of the adoption of SEPs, public regulators should involve SMEs in implementing SEPs to create resilience. This implies focusing on the objective of public policies for companies (especially SMEs) on the adoption of long term-oriented management tools and diminishing the "firefighting" orientation that tends to predominate in SMEs (Ates & Bititci, 2011; Sullivan-Taylor & Branicki, 2011).

Regarding managerial implications, our results improve managers' knowledge about the extent to which the adoption of CSR practices provides resilience in economic crises. Consequently, SME managers could take advantage of a greater level of resilience derived from the adoption of SEPs. This association implies that managers should consider the advantages of SEP adoption and, consequently, invest in SEPs, considering not only their potential long-term benefits but also the responsiveness that is generated in the short term when extreme situations arise.

7.4 | Limitations and future research

Our study has limitations that may be overcome by future studies. First, we measure resilience using managerial perceptions. Although this method has been supported in previous studies (e.g., Campbell-Sills & Stein, 2007; Notario-Pacheco et al., 2011; Soler Sánchez et al., 2016), there is a lack of consensus for measuring resilience (e.g., DesJardine et al., 2019; Ortiz-de-Mandojana & Bansal, 2016; Wenzel et al., 2020). This is because resilience is a multifaceted construct that involves a varied set of capacities, including adaptation, innovativeness, survival, and recombination of resources (Conz & Magnani, 2020), which are derived from a wide variety of sciences such as engineering, psychology, and ecological economics (Holling, 1996; Joyce et al., 2018; Lazzaroni & van Bergeijk, 2014). In this regard, instead of selecting a limited number of variables that limit the scarce knowledge on organizational resilience, we seek to answer the call by DesJardine et al. (2019) to "identify new ways of testing organizational resilience, such as qualitative process research that allows researchers to assess resiliency dynamics over time" (p. 1456).

Second, this study measures the changes in business performance during the COVID-19 crisis. Currently, there are no secondary data on how COVID-19 has affected performance. In the coming

years, it may be possible to carry out an analysis using secondary data, as the objective performance measures (such as ROA, ROE, ROI, etc.) for the period 2020–2022 will be available on databases that provide economic and financial information. For this reason, to analyze the effects of the COVID-19 crisis on performance, we had to rely on self-reported information collected through questionnaires. Future studies should investigate changes in performance during the COVID-19 period by analyzing objective performance measures.

Third, our sample comprised SMEs located in southern Spain. This region heavily relies on SMEs, and despite this figure being similar to some highly innovative countries like the U.S., where SMEs account for 99% of employment (Eggers, 2020), future studies should compare our results with those obtained from other regions in Europe or across the globe.

Finally, our analysis is based on a relatively well-developed country like Spain, which has benefited from the EU's financial aid. More particularly, the EU has launched the "Next Generation EU," which has been described as the "the largest stimulus package ever" (European Commission, 2021) and amounts for a total of €2 trillion of aid for recovering from COVID-19. Although this figure is similar to that of other developed economies such as the U.S., which allocated $1.9 trillion to crisis recovery (Washington Post, 2021), less developed countries may not benefit from this external aid. This represents a limitation shared by most studies analyzing COVID-19 consequences. Thus testing the resilience of SMEs facing the COVID-19 crisis in the context of developing countries would be extremely useful for advancing the understanding of this scarcely studied area of organizational resilience (DesJardine et al., 2019).

CONFLICT OF INTEREST STATEMENT

None of the authors have a conflict of interest to disclose.

PEER REVIEW

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DATA AVAILABILITY STATEMENT

Data available on request from the authors.

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ENDNOTES

[1] As anecdotal evidence, some large companies have not suffered but largely benefited from COVID-19. For instance, compulsory lockdowns drove the use of online shopping to a point where Amazon increased its profit by 220% during the pandemic (New York Times, 2021). This situation is less likely for SMEs.

[2] Our intention is not to criticize the work of Foroni et al. (2020) from the European Central Bank, but rather to highlight the difficulty in forecasting the impact of a crisis. According to the same report, the margin of error may be large, and some forecasts may be "too optimistic" (Foroni et al., 2020, p. 4).

[3] SME are companies with fewer than 250 employees with either an annual turnover not exceeding €40 million or an annual balance sheet total not exceeding €27 million (adjustments are made in these values regularly), and those that were independent with less than 25% of the capital owned by one enterprise or jointly by several enterprises.

[4] The null hypothesis of McNemar's test is the existence of marginal homogeneity. Marginal homogeneity exists when the row and column marginal frequencies of paired samples are equal.

[5] Similar to prior studies that have analyzed environmental management issues (e.g., Ortega-Carrasco & Ferrón-Vílchez, 2022), we used the median to create the dichotomous variable.

[6] More information about PROCESS macro: https://www.processmacro.org/index.html.

[7] Similar to the Heckman regression model, four control variables were incorporated in this mediating analysis: size (coeff. = .1019; sig. > 0.05), RTET (coeff. = −.2462; sig. < 0.05), ROE in the previous fiscal year (coeff. = −.0093; sig. > 0.05), and indebtedness ratio in the previous fiscal year (coeff. = .2157; sig. < 0.05).

REFERENCES

Acquaah, M., Amoako-Gyampah, K., & Jayaram, J. (2011). Resilience in family and nonfamily firms: An examination of the relationships between manufacturing strategy, competitive strategy and firm performance. *International Journal of Production Research*, 49(18), 5527–5544.

Ahmed, A. H., Eliwa, Y., & Power, D. M. (2019). The impact of corporate social and environmental practices on the cost of equity capital: UK evidence. *International Journal of Accounting & Information Management*, 27(3), 425–441.

Akgün, A. E., & Keskin, H. (2014). Organisational resilience capacity and firm product innovativeness and performance. *International Journal of Production Research*, 52(23), 6918–6937.

Altig, D., Baker, S., Barrero, J. M., Bloom, N., Bunn, P., Chen, S., Davis, S. J., Leather, J., Meyer, B., Mihaylov, P. M., Parker, N., Renault, T., Smietanka, P., & Thwaites, G. (2020). Economic uncertainty before and during the COVID-19 pandemic. *Journal of Public Economics*, 191, 104274.

Ambulkar, S., Blackhurst, J., & Grawe, S. (2015). Firm's resilience to supply chain disruptions: Scale development and empirical examination. *Journal of Operations Management*, 33(34), 111–122.

Aragón-Correa, J. A., Hurtado-Torres, N., Sharma, S., & García-Morales, V. J. (2008). Environmental strategy and performance in small firms: A resource-based perspective. *Journal of Environmental Management*, 86(1), 88–103.

Ates, A., & Bititci, U. (2011). Change process: A key enabler for building resilient SMEs. *International Journal of Production Research*, 49(18), 5601–5618.

Bansal, P., Kim, A., & Wood, M. O. (2018). Hidden in plain sight: The importance of scale in organizations' attention to issues. *Academy of Management Review*, 43(2), 217–241.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182.

Battisti, M., Beynon, M., Pickernell, D., & Deakins, D. (2019). Surviving or thriving: The role of learning for the resilient performance of small firms. *Journal of Business Research*, 100, 38–50.

Bhamra, R., & Dani, S. (2011). Creating resilient SMEs. *International Journal of Production Research*, 49, 5373–5374.

Blundel, R., Monaghan, A., & Thomas, C. (2013). SMEs and environmental responsibility: A policy perspective. *Business Ethics: A European Review*, 22(3), 246–262.

Bourletidis, K., & Triantafyllopoulos, Y. (2014). SMEs survival in time of crisis: Strategies, tactics and commercial success stories. *Procedia-Social and Behavioral Sciences*, 148, 639–644.

Branicki, L. J., Sullivan-Taylor, B., & Livschitz, S. R. (2018). How entrepreneurial resilience generates resilient SMEs. *International Journal of Entrepreneurial Behavior & Research*, 24(7), 1244–1263.

Burnard, K., & Bhamra, R. (2011). Organisational resilience: Development of a conceptual framework for organisational responses. *International Journal of Production Research*, 49(18), 5581–5599.

Campbell-Sills, L., & Stein, M. B. (2007). Psychometric analysis and refinement of the Connor-Davidson Resilience Scale (CD-RISC): Validation of a 10-item measure of resilience. *Journal of Trauma Stress*, 20(6), 1019–1028.

Carmeli, A., & Markman, G. D. (2011). Capture, governance, and resilience: Strategy implications from the history of Rome. *Strategic Management Journal*, 32(3), 322–341.

Christianson, M. K., Farkas, M. T., Sutcliffe, K. M., & Weick, K. E. (2009). Learning through rare events: Significant interruptions at the Baltimore & Ohio railroad museum. *Organization Science*, 20(5), 846–860.

Congloff, M. (2022). *Crypto is the new dot-com bust. Could it also be the new crisis?* Bloomberg. https://www.bloomberg.com/opinion/articles/2022-05-12/crypto-is-the-new-dot-com-bust-could-it-also-be-the-new-crisis

Conway, E. (2015). Engaging small and medium-sized enterprises (SMEs) in the low carbon agenda. *Energy, Sustainability and Society*, 5(1), 1–9.

Conz, E., & Magnani, G. (2020). A dynamic perspective on the resilience of firms: A systematic literature review and a framework for future research. *European Management Journal*, 38(3), 400–412.

Crossley, R. M., Elmagrhi, M. H., & Ntim, C. G. (2021). Sustainability and legitimacy theory: The case of sustainable social and environmental practices of small and medium-sized enterprises. *Business Strategy and the Environment*, 30(8), 3740–3762.

Darnall, N. (2009). Regulatory stringency, green production offsets and organizations' financial performance. *Public Administration Review*, 69(3), 418–434.

Darnall, N., Henriques, I., & Sadorsky, P. (2008). Do environmental management systems improve business performance in an international setting? *Journal of International Management*, 14(4), 364–376.

DesJardine, M., Bansal, P., & Yang, Y. (2019). Bouncing back: Building resilience through social and environmental practices in the context of the 2008 global financial crisis. *Journal of Management*, 45(4), 1434–1460.

Desmedt, L., Piégay, P., & Sinapi, C. (2010). From 2009 to 1929: Lessons from Fisher, Keynes, and Minsky. *International Journal of Political Economy*, 39(2), 26–40.

DIRCE. (2021). *Central directory of enterprises*. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica_C&cid=1254736160707&menu=ultiDatos&idp=1254735576550

Eggers, F. (2020). Masters of disasters? Challenges and opportunities for SMEs in times of crisis. *Journal of Business Research*, 116, 199–208.

Eggers, F., Hansen, D. J., & Davis, A. E. (2012). Examining the relationship between customer and entrepreneurial orientation on nascent firms' marketing strategy. *International Entrepreneurship and Management Journal*, 8(2), 203–222.

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal*, 21(10–11), 1105–1121.

European Commission. (2003). *Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises*. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32003H0361

European Commission. (2021). *Recovery plan for Europe*. https://ec.europa.eu/info/strategy/recovery-plan-europe_en

European Commission. (2022). *Entrepreneurship and small and medium-sized enterprises (SMEs)*. https://ec.europa.eu/growth/smes_en

Fath, B., Fiedler, A., Sinkovics, N., Sinkovics, R. R., & Sullivan-Taylor, B. (2021). International relationships and resilience of New Zealand SME exporters during COVID-19. *Critical Perspectives on International Business*, 17(2), 359–379.

Ferrón-Vílchez, V., & Darnall, N. (2016). Two are better than one: The link between management systems and business performance. *Business Strategy and the Environment*, 25(4), 221–240.

Ferrón-Vílchez, V., Darnall, N., & Aragón Correa, J. A. (2017). Stakeholder influences on the design of firms' environmental practices. *Journal of Cleaner Production*, 142(4), 3370–3381.

Forcadell, F. J., & Aracil, E. (2021). A purpose-action framework for corporate social responsibility in times of shock. *Journal of Cleaner Production*, 312, 127789.

Foroni, C., Marcellino, M., & Stevanovic, D. (2020). *Forecasting the COVID-19 recession and recovery: Lesson from the financial crisis*. European Central Bank. ECB Working paper series. No 2468 (September 2020). https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp2468~068eec9e3e.en.pdf

Franco-Santos, M., Kennerley, M., Micheli, P., Martínez, V., Mason, S., Marr, B., Gray, D., & Neely, A. (2007). Towards a definition of a business performance measurement system. *International Journal of Operations and Production Management*, 27(8), 784–801.

Freeman, J., Carroll, G. R., & Hannan, M. T. (1983). The liability of newness: Age dependence in organizational death rates. *American Sociological Review*, 48(5), 692–710.

Gittell, J. H., Cameron, K., Lim, S., & Rivas, V. (2006). Relationships, layoffs, and organizational resilience. *Journal of Applied Behavioral Science*, 42, 300–329.

Godfrey, P. C., Merrill, C. B., & Hansen, J. M. (2009). The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Strategic Management Journal*, 30, 425–445.

González-Benito, J., & González-Benito, O. (2005). Environmental proactivity and business performance: An empirical analysis. *Omega*, 33(1), 1–15.

Gourinchas, P. O., Kalemli-Özcan, Ş., Penciakova, V., & Sander, N. (2021). *Covid-19 and SME failures*. National Bureau of Economic Research. NBER Working paper series. No. w27877. https://www.ecb.europa.eu/pub/conferences/shared/pdf/20211011_mon_pol_conf/Kalemli-OzcanSME_Failures.pdf

Gray, D., & Jones, K. F. (2016). Using organisational development and learning methods to develop resilience for sustainable futures with SMEs and micro businesses: The case of the business alliance. *Journal of Small Business and Enterprise Development*, 23(2), 474–494.

Greene, W. H. (2011). *Econometric analysis* (7th ed.). Prentice Hall.

Grolleau, G., Mzoughi, N., & Pekovic, S. (2013). Is business performance related to the adoption of quality and environmental‐related standards? *Environmental and Resource Economics*, *54*(4), 525–548.

Gunasekaran, A., Rai, B. K., & Griffin, M. (2011). Resilience and competitiveness of small and medium size enterprises: An empirical research. *International Journal of Production Research*, *49*(18), 5489–5509.

Gunderson, L., & Pritchard, L. (Eds.). (2002). *Resilience and the behavior of large‐scale systems*. Island Press.

Hart, S. L., & Ahuja, G. (1996). Does it pay to be green? An empirical examination of the relationship between emission reduction and firm performance. *Business Strategy and the Environment*, *5*(1), 30–37.

Heckman, J. (1979). Sample selection bias as a specification error. *Econometrica*, *47*(1), 153–161.

Hendricks, K. B., & Singhal, V. R. (2001). Firm characteristics, total quality management, and financial performance. *Journal of Operations Management*, *19*(3), 269–285.

Holling, C. S. (1996). Engineering resilience versus ecological resilience. In P. Schulze (Ed.), *Engineering within ecological constraints* (pp. 31–44). National Academy of Engineering.

Holling, C. S. (2001). Understanding the complexity of economic, ecological, and social systems. *Ecosystems*, *4*(5), 390–405.

Iftikhar, A., Purvis, L., & Giannoccaro, I. (2021). A meta‐analytical review of antecedents and outcomes of firm resilience. *Journal of Business Research*, *135*, 408–425.

International Monetary Fund. (1998). *The Asian crisis: Causes and curses*. https://www.imf.org/external/pubs/ft/fandd/1998/06/imfstaff.htm

Ismail, H. S., Poolton, J., & Sharifi, H. (2011). The role of agile strategic capabilities in achieving resilience in manufacturing‐based small companies. *International Journal of Production Research*, *49*(18), 5469–5487.

Jain, T., Brennan, L., & Van Buren, H. J. (2020). Leading in a troubled world: Lessons from COVID‐19. *California Management Review*. https://cmr.berkeley.edu/2020/08/leading-in-a-troubled-world/

Johnson, M. P. (2015). Sustainability management and small and medium‐sized enterprises: Managers' awareness and implementation of innovative tools. *Corporate Social Responsibility and Environmental Management*, *22*, 271–285.

Johnson, M. P., & Schaltegger, S. (2016). Two decades of sustainability management tools for SMEs: How far have we come? *Journal of Small Business Management*, *54*, 481–505.

Johnstone, N., Serravalle, C., Scapecchi, P., & Labonne, J. (2007). Project background, overview of the data and summary results. In N. Johnstone (Ed.), *Environmental policy and corporate behavior* (pp. 1–33). Elgar.

Joyce, S., Shand, F., Tighe, J., Laurent, S. J., Bryant, R. A., & Harvey, S. B. (2018). Road to resilience: A systematic review and meta‐analysis of resilience training programmes and interventions. *BMJ Open*, *8*(6), e017858.

Lazzaroni, S., & van Bergeijk, P. A. (2014). Natural disasters' impact, factors of resilience and development: A meta‐analysis of the macroeconomic literature. *Ecological Economics*, *107*, 333–346.

Lepoutre, J., & Heene, A. (2006). Investigating the impact of firm size on small business social responsibility: A critical review. *Journal of Business Ethics*, *67*, 257–273.

Leyva‐de la Hiz, D. I., Ferrón‐Vílchez, V., & Aragón‐Correa, J. A. (2019). Do firms' slack resources influence the relationship between focused environmental innovations and financial performance? More is not always better. *Journal of Business Ethics*, *159*(4), 1215–1227.

Li, X., Wu, Q., Holsapple, C. W., & Goldsby, T. (2017). An empirical examination of firm financial performance along dimensions of supply chain resilience. *Management Research Review*, *40*(3), 254–269.

Martínez‐Costa, M., & Martínez‐Lorente, R. (2008). Sistemas de gestión de la calidad y resultados empresariales: Una justificación desde las teorías institucional y de recursos y capacidades. *Cuadernos de Economía y Dirección de la Empresa*, *34*, 7–30.

McNemar, Q. (1947). Note on the sampling error of the difference between correlated proportions or percentages. *Psychometrika*, *12*(2), 153–157.

McPhee, W. (2014). A new sustainability model: Engaging the entire firm. *Journal of Business Strategy*, *35*(2), 4–12.

Melnyk, S., Narasimhan, R., & DeCampos, H. (2014). SC design: Issues, challenges, frameworks and solutions. *International Journal of Production Research*, *52*(7), 1887–1896.

New York Times. (2021). *Amazon's profit soars 220 percent as pandemic drives shopping online*. https://www.nytimes.com/2021/04/29/technology/amazons-profits-triple.html

Notario‐Pacheco, B., Solera, M., Serrano, M. D., Bartolomé, R., García‐Campayo, J., & Martínez‐Vizcaíno, V. (2011). Reliability and validity of the Spanish version of the 10 item Connor–Davidson Resilience Scale (10 item CDRISC) in young adults. *Health Quality Life Outcomes*, *9*, 63–68.

Oppermann, M. (2000). Triangulation—A methodological discussion. *International Journal of Tourism Research*, *2*(2), 141–145.

Ortega‐Carrasco, P., & Ferrón‐Vílchez, V. (2022). Sending corporate social responsibility signals: What organizational characteristics must be met? *Review of Business Management*, *24*(1), 92–111.

Ortiz‐de‐Mandojana, N., & Bansal, P. (2016). The long‐term benefits of organizational resilience through sustainable business practices. *Strategic Management Journal*, *37*(8), 1615–1631.

Pal, R., Torstensson, H., & Mattila, H. (2014). Antecedents of organizational resilience in economic crises—An empirical study of Swedish textile and clothing SMEs. *International Journal of Production Economics*, *147*, 410–428.

Pedauga, L., Sáez, F., & Delgado‐Márquez, B. L. (2022). Macroeconomic lockdown and SMEs: The impact of the COVID‐19 pandemic in Spain. *Small Business Economics*, *58*(2), 665–688.

Pimm, S. L. (1991). *The balance of nature? Ecological issues in the conservation of species and communities*. University of Chicago Press.

Podsakoff, P. M., & Organ, D. W. (1986). Self‐reports in organizational research: Problems and prospects. *Journal of Management*, *12*(4), 531–544.

Post, W. (2021). *How the $1.9 trillion U.S. stimulus package compares with other countries' coronavirus spending*. https://www.washingtonpost.com/world/2021/03/10/coronavirus-stimulus-international-comparison/

Ruiz‐Benítez, R., López, C., & Real, J. C. (2018). The lean and resilient management of the supply chain and its impact on performance. *International Journal of Production Economics*, *203*, 190–202.

Siegel, S. (1956). *Non‐parametric statistics for the behavioral sciences*. McGraw‐Hill.

Smallbone, D., Deakins, D., Battisti, M., & Kitching, J. (2012). Small business responses to a major economic downturn: Empirical perspectives from New Zealand and the United Kingdom. *International Small Business Journal*, *39*(7), 754–777.

Soler Sánchez, M. I., Meseguer de Pedro, M., & García Izquierdo, M. (2016). Propiedades psicométricas de la versión española de la escala de resiliencia de 10 ítems de Connor‐Davidson (CD‐RISC 10) en una muestra multiocupacional. *Revista Latinoamericana de Psicología*, *48*(3), 159–166.

Sullivan‐Taylor, B., & Branicki, L. (2011). Creating resilient SMEs: Why one size might not fit all. *International Journal of Production Research*, *49*(18), 5565–5579.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509–533.

United Nations. (2022). *Micro‐, small and medium‐sized enterprises day*. https://www.un.org/en/observances/micro-small-medium-businesses-day

Van Der Vegt, G. S., Essens, P., Wahlström, M., & George, G. (2015). Managing risk and resilience. *Academy of Management Journal*, *58*, 971–980.

Walker, B., Holling, C., Carpenter, S., & Kinzig, A. (2004). Resilience, adaptability and transformability in social–ecological systems. *Ecology and Society*, *9*(2), 5.

Wang, H., Choi, J., & Li, J. (2008). Too little or too much? Untangling the relationship between corporate philanthropy and firm financial performance. *Organization Science*, *19*, 143–159.

Wenzel, M., Stanske, S., & Lieberman, M. B. (2020). Strategic responses to crisis. *Strategic Management Journal*, *41*, 7–18.

Winter, S. G. (2003). Understanding dynamic capabilities. *Strategic Management Journal*, *24*(10), 991–995.

World Bank. (2015). *Small and medium enterprises (SMEs) finance: The World Bank key messages bulletin.* https://www.worldbank.org/en/topic/smefinance

Yu, W., Jacobs, M. A., Chavez, R., & Yang, J. (2019). Dynamism, disruption orientation, and resilience in the supply chain and the impacts on financial performance: A dynamic capabilities perspective. *International Journal of Production Economics*, *218*, 352–362.

Zollo, M., & Winter, S. G. (2002). Deliberate learning and the evolution of dynamic capabilities. *Organization Science*, *13*(3), 339–351.